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SEQUENCE LISTING

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<120> Nucleic Acids and Polypeptides of C1
Bacteriophage and Uses Thereof

<130> 600-1-297PCT

<150> 60/470655

<151> 2003-05-15

<160> 31

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 173

<212> PRT

<213> Bacteriophage C1 polypeptide

<400> 1

Met	Lys	Ile	Arg	Met	Lys	Thr	Thr	Ile	Tyr	Thr	Phe	Ser	Thr	Thr	Ile	Ala
1				5			10							15		
Thr	Leu	Ala	Leu	Gly	Val	Asn	Leu	Leu	Met	Asp	Lys	Gly	Asp	Asn	Asn	
	20				25							30				
Asn	Val	Asn	Thr	Asp	Asn	Thr	Phe	Asn	Asn	Ser	Asn	Pro	Ile	Val	Gln	
	35				40						45					
Val	Asp	Asn	Asn	Ser	Ser	Glu	Ala	Thr	Thr	Thr	Ile	Thr	Ser	Asp	Thr	
	50				55						60					
Asn	Asp	Asn	Gln	Val	Ala	Ala	Asp	Asp	Thr	Asn	Asp	Thr	Glu	Gln	Leu	
	65			70						75			80			
Asp	Tyr	Phe	Gln	Pro	Tyr	Glu	Tyr	Leu	Tyr	Met	Pro	Ser	Thr	Asn	Val	
		85				90						95				
Ser	Ser	Ile	Arg	Asp	Gly	Tyr	Tyr	Leu	Val	Ser	Gly	Gly	Asn	Thr	Leu	
		100				105					110					
Ala	Ala	Val	Gln	Ile	Thr	Asn	Gly	Tyr	Thr	Asp	Glu	Phe	Arg	Leu		
		115				120					125					
Lys	Asn	Ile	Ser	Ala	Glu	Gln	Trp	Thr	Val	Ser	Gln	Gln	Met	Glu		
		130			135						140					
Asp	Phe	Val	Tyr	Trp	Leu	Arg	Glu	Val	Ser	Pro	Ser	Gly	Tyr	Asn	Gln	
	145				150					155			160			
Lys	Ser	Leu	Glu	Asn	Asn	Phe	Lys	Ile	Phe	Ile	Lys	Lys				
			165				170									

<210> 2

<211> 62

<212> PRT

<213> Bacteriophage C1 polypeptide

<400> 2

Met Lys Thr Gln Glu Trp Tyr Leu Val Asn Phe Gly Leu Tyr Glu Thr

1	5	10	15												
Lys	Thr	Gln	Glu	Met	Glu	Thr	Asn	Ser	Arg	Tyr	Phe	Glu	Asp	Lys	Gln
20							25						30		
Ala	Ala	Leu	Asp	Phe	Phe	Tyr	Thr	Leu	Ala	Asn	Glu	Gly	Tyr	Tyr	Asp
35							40						45		
Trp	Ala	His	Val	Tyr	Ser	Asn	Leu	Glu	Met	Glu	Ile	Ile	Leu		
50							55						60		

<210> 3
 <211> 178
 <212> PRT
 <213> Bacteriophage C1 polypeptide

<400> 3

Met	Lys	Gln	Thr	Asn	Ile	Asp	Ala	Leu	Phe	Gly	Lys	Gly	Asp	His	Gln
1														15	
Leu	Met	Asn	Lys	Glu	Ser	Lys	Tyr	Leu	Ser	Thr	Leu	Phe	Ile	Asn	Ile
20								25					30		
Glu	Glu	Leu	Ser	Val	His	Leu	Ser	Ser	Val	Thr	Leu	Phe	Ile	Asp	Glu
35								40					45		
Tyr	Glu	Gln	Leu	Lys	Glu	Asn	Ala	Ile	Lys	Ser	Lys	Asn	Gly	Lys	Cys
50								55					60		
Leu	Lys	Leu	Gly	Asn	Thr	Leu	Tyr	Phe	Thr	Asn	Asn	Asn	Tyr	Ala	Thr
65								70					75		80
Lys	Leu	Tyr	Asn	Ser	Leu	Leu	Ala	Leu	Gly	Phe	Asn	Gly	Ala	Asn	Ser
85								90					95		
Phe	Ser	Ser	Gly	Glu	Gln	Thr	Tyr	Val	Ile	Ser	Leu	Thr	Gly	Gly	Asn
100								105					110		
Ala	Thr	Leu	Thr	Thr	Val	Lys	Thr	His	Tyr	Gly	Asp	Val	Lys	Tyr	His
115								120					125		
Tyr	Lys	His	Glu	Lys	Leu	Pro	Val	Lys	Ile	Val	Asn	Asp	Phe	Trp	
130								135					140		
Leu	Ser	Glu	Gln	Glu	Tyr	Val	Tyr	Thr	Asn	Ser	Ile	Lys	Leu	Ala	Tyr
145								150					155		160
Ala	Leu	Leu	Asp	Leu	Tyr	Lys	Thr	Met	Gly	Tyr	Ser	Thr	Leu	Asn	Thr
165								170					175		
Ile	Lys														

<210> 4
 <211> 105
 <212> PRT
 <213> Bacteriophage C1 polypeptide

<400> 4

Met	Ala	Ile	Asn	Phe	Thr	Asn	Ile	Gly	Phe	Ile	Asn	Phe	Asn	Lys	Glu
1													15		
Tyr	Asn	Lys	Val	Leu	Lys	Asn	Gly	Ala	Ile	Thr	Ala	Ser	Met	Ser	Ala
20								25					30		
Ser	Gln	Lys	Asp	Val	Lys	Gly	Glu	Tyr	Val	Asp	Glu	Tyr	His	Asn	Val
35								40					45		
Thr	Ile	Pro	Lys	Lys	Val	Ala	Asp	Gln	Ile	Lys	Pro	Leu	Ile	Asn	Thr
50								55					60		
Glu	Leu	Cys	Asp	Ile	Gln	Gly	Val	Ile	Ser	Arg	Asn	Asp	Lys	Tyr	Thr
65								70					75		80

Asn Ile Thr Ile Leu Gly Ala Lys Lys His Val Lys Ala Glu Ala Val	85	90	95
Asp Val Ala Asp Glu Asp Leu Pro Phe	100	105	

<210> 5
 <211> 207
 <212> PRT
 <213> Bacteriophage C1 polypeptide

<400> 5

Met Lys Gly Asp Glu Glu Arg Thr Ile Lys Ser Leu Phe Pro Leu Phe	1	5	10	15
Lys Tyr Met Ala Asn Lys Arg Gln Arg Lys Lys Gln Leu Lys Gln Gln	20	25	30	
Tyr Gly Val Gly His Lys Tyr Thr Pro Lys Leu Ser Gln Thr Gln Gln	35	40	45	
Lys Gln Ala Asp Phe Leu Lys Ser Ile Gly Gln Lys Phe Thr Asn Tyr	50	55	60	
Gln Thr Val Thr Ile Asp Lys Thr Tyr Ser Lys Asn Gln Glu Leu Leu	65	70	75	80
Asp Thr Ala Asn Glu Ala Leu His Arg Leu Gly Ile Phe Phe Asp Gly	85	90	95	
Ser Glu Lys Ile Lys Leu Gln Gln Val Thr Asp Asp Asp Leu Arg Tyr	100	105	110	
Ile Ile Asn Lys Leu Gln Pro Leu Leu Glu Ser Val Thr Met Arg Tyr	115	120	125	
Lys Lys Phe Leu Thr Asn Thr Tyr Arg Ser Asn Asn Arg Asp Tyr Arg	130	135	140	
Leu Asp Trp Leu Leu Lys Ser Ala Ile Ser Lys Lys Leu Lys Asn Ala	145	150	155	160
Gln Thr Val Arg Gly Leu Val Val Ala Ile Asn Lys Met Asp Arg Asp	165	170	175	
Phe Lys Glu Tyr Asp Lys Lys Leu Arg Lys Ser Ser Lys Gln Gly Asn	180	185	190	
Pro Phe Gly Phe Val Val Val Lys Tyr Ser Glu Met Gly Leu Met	195	200	205	

<210> 6
 <211> 408
 <212> PRT
 <213> Bacteriophage C1 polypeptide

<400> 6

Met Ala Arg Lys Val Lys Lys Thr Ile Lys Thr Ile Phe Lys Asn Glu	1	5	10	15
Glu Glu Glu Phe Lys Thr Leu Leu Asn Asp Tyr Arg Lys Lys Tyr Leu	20	25	30	
Pro Ser Lys Tyr Asn Gln Leu Glu Leu Leu Asp Trp Leu Cys Ser Asp	35	40	45	
Glu Ile Leu His Tyr Met Ser Ile Thr Ser Arg Gly Asp Gly Lys Ser	50	55	60	
Phe Asn Tyr Ile Gly Ala Leu Ala Trp Leu Ser Tyr His Leu Asn Phe	65	70	75	80
Gly Thr Met Leu Leu Val Arg His Trp Ser Leu Met Asp Lys Met Ala				

85	90	95	
Glu Met Val Phe Glu Ile Ile Arg Thr Val Gly Met Phe Asp Ile Glu			
100	105	110	
Asn Val Gly Ile Gln Ala Lys Ala Asp Tyr Leu Thr Ile Thr Ile Glu			
115	120	125	
Gly Arg Glu Val Phe Ile Ile Thr Asn Leu Asn Asn Ala Ser Asp Leu			
130	135	140	
Lys Gln Ser Ser Ala Val Leu Arg Asn Tyr Pro Val Val Leu Tyr Asp			
145	150	155	160
Glu Phe Leu Thr Leu Gly Glu Asp Tyr Val Thr Asn Glu Leu Ala Lys			
165	170	175	
Leu Gln Thr Ile Ile Lys Ser Ile Asp Arg Met Gly Lys Arg Pro Tyr			
180	185	190	
Ile Lys Arg Pro Lys Ile Ile Tyr Leu Gly Asn Pro Val Asn Phe Asp			
195	200	205	
Ser Pro Ile Leu Pro Ala Leu Asn Ile Phe Tyr Ala Leu Gln Asn Gln			
210	215	220	
Glu Ile Asn Thr Ile Gln Gln His Gly Lys Thr Ile Leu Glu Leu Arg			
225	230	235	240
Arg Asn Asp Glu Val Asn Glu Glu Lys Thr Thr Gly Tyr Phe Glu Asp			
245	250	255	
Ser Val Asp Ser Asp Ile Thr Gly Glu Phe Asn Phe Ser Asn Tyr Arg			
260	265	270	
Leu Ala Asp Gln Gln Thr Tyr Asn Lys Ala Leu Thr Asn Gly Thr Leu			
275	280	285	
Tyr Lys Ile Arg Leu Glu Asp Lys Leu Ser Tyr Val Ile Leu Glu Ser			
290	295	300	
Asp Asn Glu Tyr Ile Leu Ser Ile Glu Glu Ser Lys Leu Asp Glu Asn			
305	310	315	320
Tyr Cys Ile His Leu Lys Asp Glu Thr Ala Thr Cys Glu Tyr Leu Lys			
325	330	335	
Pro Ser Phe Tyr Lys Asp Ser Phe Ile Lys Arg Phe Gln Lys Gly His			
340	345	350	
Phe Asn Phe Lys Asp Ser Phe Ser Arg Thr Phe Ile Glu Gly Asn Glu			
355	360	365	
Asp Leu Gln Arg Leu Asn Phe Phe Lys Leu Asn Ala Val Ala Ser Thr			
370	375	380	
Asp His Glu Asp Ala Tyr Ala Asn Ile Val Arg Glu Ser Trp Ile Ser			
385	390	395	400
Arg Leu Ala Lys Ile Tyr Glu Gln			
405			

<210> 7
 <211> 784
 <212> PRT
 <213> Bacteriophage C1 polypeptide

<400> 7
 Met Lys Glu Phe Glu Gln Tyr Leu Lys Ser Phe Lys Gly Gln Lys Val
 1 5 10 15
 Thr Ser Val Asp Leu Tyr Cys Asp Ile Glu Thr Ala Thr Ile Asn Lys
 20 25 30
 Asn Ser Gly Gln Lys His Ala Ser Thr Tyr His Ser Phe Thr Tyr Ser
 35 40 45
 Leu Ala Val Ser Tyr Phe Lys Thr Gly Glu Glu Phe Pro Ser Val Val
 50 55 60

Val Phe Asn His Phe Lys Gln Leu Phe Asp Phe Ile Glu Lys Ser Lys
 65 70 75 80
 Ile Arg Lys Ser Ile Glu Phe Arg Leu Ile Phe His Asn Gly Ala Lys
 35 90 95
 Tyr Asp Asn His Phe Met Val Ser Glu Ile Gln Arg Asp Ile Asp Asn
 100 105 110
 Val Arg Leu Phe Asn Gln Thr Ile Lys Gln Val Asn His Ile Thr Asp
 115 120 125
 Leu Asp Leu Ser Lys Lys Gln Gly Lys Gln Met Arg Asn Asp Val Asn
 130 135 140
 Met Val Leu Glu Arg Arg Val Arg Ser Ser Asn Asn Leu Asp Gly Asp
 145 150 155 160
 Met Trp Ile Tyr Gly Arg His Tyr Glu Met Val Asp Ser Tyr Arg Lys
 165 170 175
 Thr Asn Val Ser Ile Glu Leu Cys Gly Arg Met Leu Leu Asn Asn Gly
 180 185 190
 Leu Ile Asp Glu Gln Tyr Leu Lys Thr Asp Phe Glu Tyr Asp Lys Tyr
 195 200 205
 Asp Leu Asp Thr Asp Leu Thr Trp His Glu Val Arg Lys Tyr Arg Glu
 210 215 220
 Phe Ile Phe Asn Asp Leu Asp Glu Lys Gln Met Lys Tyr Ile His Asn
 225 230 235 240
 Asp Val Ile Ile Leu Ala Leu Thr Cys Lys His Tyr Ser Lys Leu Phe
 245 250 255
 Tyr Gly Phe Asp Phe Glu Lys Gln Thr Phe Thr Gln Asn Ile Lys Glu
 260 265 270
 Glu Tyr Ala Asn Tyr Asn Asp Met Ala Lys Phe Gln Leu Leu Lys Gln
 275 280 285
 Ile Gly Asp Asn Met Thr Gly Lys His Leu Lys Leu Thr Asp Tyr Phe
 290 295 300
 Ile Gln Gly Gln Asn Ala Tyr Asp Tyr Phe Lys Asn Tyr Tyr Asn Gly
 305 310 315 320
 Gly Leu Asn Leu Tyr Asn Asp Lys Tyr Ile Gly Lys Lys Leu Val Arg
 325 330 335
 Asp Gly Phe Ser Ile Asp Leu Asn Ser Ser Tyr Pro Thr Val Met Tyr
 340 345 350
 Lys Glu Lys Leu Pro Thr Phe Leu Val Met Val Asp Ser Lys Pro Thr
 355 360 365
 Asp Leu Lys Asn Ile Gly Ser Thr Asp Gly Asp Tyr Met Val Phe Phe
 370 375 380
 Asn Met Leu Met Glu Asp Val Asn Asp Gln Ile Leu Ser Arg Ile Lys
 385 390 395 400
 Ser Asn Val Ile Lys Ser Ala Ile Val Lys Tyr Trp Arg Val Lys Asp
 405 410 415
 Gly Tyr Val Trp Leu Asn Asn Val Met Ile Ser Leu Ile Glu Glu Ile
 420 425 430
 Thr His Gln Lys Phe Asn Asn Leu His Val Gln Ser Phe Ser Val Phe
 435 440 445
 Glu Cys His His Phe Gly Ala Arg Asp Ile Ile Ala Lys Asn Tyr Phe
 450 455 460
 Ile Lys Thr Gln Gly Lys Met Ser Lys Ala Leu Asn Cys Thr Met Glu
 465 470 475 480
 Thr Ile Asp Pro Leu Asn Ile Glu Leu Thr Asp Lys Asp Lys Pro Lys
 485 490 495
 Glu Tyr Asp Phe Ser His Glu Met Val Glu Gly Ser Lys Val Leu Leu
 500 505 510
 Asn Gly Ile Tyr Gly Ile Pro Ala Leu Arg Ala Tyr Phe Asp Cys Tyr

515	520	525
Arg Arg Asp Glu Asn Gly Gln	Leu Tyr Asn Val Ser	Asn Gly Phe Glu
530	535	540
Asn Lys Glu Arg Asn Ile Val Phe Ser Ala Gly Val Thr Ala Phe Ala		
545	550	555
Val Arg Asn Leu Leu Pro Leu Gly Lys	Leu Thr Gln Asp Glu Ile	
565	570	575
Asp Asp Tyr Phe Trp Tyr Ala Asp Thr Asp Ser Leu Tyr Met Asp Lys		
580	585	590
Arg Ala Leu Pro Lys Leu Pro Lys Ser Met Phe His Lys Met Asn Leu		
595	600	605
Gly Gly Trp Asp Ile Glu His Ala Asn Ile Ser Thr Phe Tyr Ala Phe		
610	615	620
Asn His Lys Lys Tyr Cys Leu Tyr Asp Asp Asp Asn Glu Ile Val		
625	630	635
Val Arg Cys Gly Gly Ile Ser Lys Ala Leu Ile Lys Lys Trp Ile Ala		
645	650	655
Glu Ser Arg Asn Asn Ile Asp Tyr Phe Ile Asn Asn Phe Phe Ile Asp		
660	665	670
Gly Val Thr Ile Pro Ala Thr Arg Ala Ile Arg Asn Glu Trp Asn Thr		
675	680	685
Ile Thr Ile Tyr Asp Gly Thr Ser Glu Leu Lys Lys Gly Gly Val Tyr		
690	695	700
Tyr Lys Lys Tyr Asp Thr Asn Leu Leu Gln Asn Ile Glu Ser Glu Leu		
705	710	715
Ala Lys Leu Lys Asp Ala Ile Leu Thr Glu Glu Ser Glu Thr Ser Leu		
725	730	735
Asp Tyr Ser Glu Thr Met Tyr Ile Glu Ser Asn Val Gly Ser Phe Gly		
740	745	750
Val Ser Asp Leu Tyr Lys Ile Lys Lys Asn Asn Thr Leu Lys Gln Ser		
755	760	765
Ser Met Ile Val Asp Glu Tyr Asp Val Phe Lys Ser Tyr Leu Ile Tyr		
770	775	780

<210> 8
 <211> 108
 <212> PRT
 <213> Bacteriophage C1 polypeptide

<400> 8

Met Ile Tyr Leu Leu Ile Leu Asn Ser Ala Asp Phe Ile Ser Gly Ile			
1	5	10	15
Leu Asn Gly Ile Ala Leu Gly Asp Ile Ser Ser Lys Lys Leu Lys Lys			
20	25	30	
Gly Ile Ile Gly Lys Leu Leu Gln Trp Ile Val Ile Ala Val Thr Ile			
35	40	45	
Thr Met Lys Pro Val Ile His Val Asp Leu Leu Thr Tyr Val Ile Ile			
50	55	60	
Tyr Tyr Tyr Ile Met Glu Val Ile Ser Ile Leu Glu Asn Val Ala Trp			
65	70	75	80
Tyr Leu Pro Val Pro Lys Lys Leu Leu Asn Val Leu Ala Gln Phe Lys			
85	90	95	
Glu Ile Glu Asn Glu Val Lys Ser Asn Glu Gln Asp			
100	105		

<210> 9

<211> 72

<212> PRT

<213> Bacteriophage C1 light chain of PlyC (PlyC B)
(formerly known as the alpha subunit)

<400> 9

Met	Ser	Lys	Ile	Asn	Val	Asn	Val	Glu	Asn	Val	Ser	Gly	Val	Gln	Gly	
1														15		
Phe	Leu	Phe	His	Thr	Asp	Gly	Lys	Glu	Ser	Tyr	Gly	Tyr	Arg	Ala	Phe	
														30		
Ile	Asn	Gly	Val	Glu	Ile	Gly	Ile	Lys	Asp	Ile	Glu	Thr	Val	Gln	Gly	
														45		
Phe	Gln	Gln	Ile	Ile	Pro	Ser	Ile	Asn	Ile	Ser	Lys	Ser	Asp	Val	Glu	
														50		
Ala	Ile	Arg	Lys	Ala	Met	Lys	Lys									
														60		
														70		
															65	

<210> 10

<211> 105

<212> PRT

<213> Bacteriophage C1 polypeptide

<400> 10

Met	Ile	Glu	Glu	Trp	Val	Lys	His	Pro	Ser	Leu	Asn	Tyr	Tyr	Ile	Ser
1														15	
Ser	Tyr	Gly	Arg	Val	Lys	Asn	Ser	Lys	Gly	Leu	Ile	Met	Lys	Gln	His
														30	
Ile	Cys	Asn	Gly	Tyr	Lys	Arg	Ile	Lys	Leu	Val	Lys	Asp	Gly	Ile	Lys
														45	
Lys	Asn	Tyr	Tyr	Val	His	Arg	Leu	Val	Ala	Glu	Thr	Phe	Ile	Pro	Lys
														50	
Leu	His	Val	Asp	Tyr	Val	Val	His	His	Ile	Asp	His	Asp	Lys	Leu	Asn
														60	
Asn	Trp	Val	His	Asn	Leu	Glu	Trp	Cys	His	Tyr	Gln	Thr	Asn	Leu	Leu
														80	
Tyr	Glu	Arg	Glu	Asn	Leu	Phe	Asn	Glu							
														95	
														100	
														105	

<210> 11

<211> 472

<212> PRT

<213> Bacteriophage C1 heavy chain of PlyC (PlyC A)
(formerly known as the beta subunit)

<400> 11

Met	Lys	Gly	Arg	Ile	Tyr	Leu	Met	Ser	Lys	Lys	Tyr	Thr	Gln	Gln	
1														15	
Tyr	Glu	Lys	Tyr	Leu	Ala	Gln	Pro	Ala	Asn	Asn	Thr	Phe	Gly	Leu	Ser
														30	
Pro	Gln	Gln	Val	Ala	Asp	Trp	Phe	Met	Gly	Gln	Ala	Gly	Ala	Arg	Pro
														45	
Val	Ile	Asn	Ser	Tyr	Gly	Val	Asn	Ala	Ser	Asn	Leu	Val	Ser	Thr	Tyr
														50	
Ile	Pro	Lys	Met	Gln	Glu	Tyr	Val	Ser	Tyr	Thr	Leu	Phe	Leu	Met	

65	70	75	80
Tyr Thr Val Phe Glu Gly Gly Ala Gly Asn Trp Ile Asn His Tyr			
85	90	95	
Met Tyr Asp Thr Gly Ser Asn Gly Leu Glu Cys Leu Glu His Asp Leu			
100	105	110	
Gln Tyr Ile His Gly Val Trp Glu Thr Tyr Phe Pro Pro Ala Leu Ser			
115	120	125	
Ala Pro Glu Cys Tyr Pro Ala Thr Glu Asp Asn Ala Gly Ala Leu Asp			
130	135	140	
Arg Phe Tyr Gln Ser Leu Pro Gly Arg Thr Trp Gly Asp Val Met Ile			
145	150	155	160
Pro Ser Thr Met Ala Gly Asn Ala Trp Val Trp Ala Tyr Asn Tyr Cys			
165	170	175	
Val Asn Asn Gln Gly Ala Ala Pro Leu Val Tyr Phe Gly Asn Pro Tyr			
180	185	190	
Asp Ser Gln Ile Asp Ser Leu Leu Ala Met Gly Ala Asp Pro Phe Thr			
195	200	205	
Gly Gly Ser Ile Thr Gly Asp Gly Lys Asn Pro Ser Val Gly Thr Gly			
210	215	220	
Asn Ala Thr Val Ser Ala Ser Ser Glu Ala Asn Arg Glu Lys Leu Lys			
225	230	235	240
Lys Ala Leu Thr Asp Leu Phe Asn Asn Leu Glu His Leu Ser Gly			
245	250	255	
Glu Phe Tyr Gly Asn Gln Val Leu Asn Ala Met Lys Tyr Gly Thr Ile			
260	265	270	
Leu Lys Cys Asp Leu Thr Asp Asp Gly Leu Asn Ala Ile Leu Gln Leu			
275	280	285	
Ile Ala Asp Val Asn Leu Gln Thr Asn Pro Asn Pro Asp Lys Pro Thr			
290	295	300	
Val Gln Ser Pro Gly Gln Asn Asp Leu Gly Ser Gly Ser Asp Arg Val			
305	310	315	320
Ala Ala Asn Leu Ala Asn Ala Gln Ala Gln Val Gly Lys Tyr Ile Gly			
325	330	335	
Asp Gly Gln Cys Tyr Ala Trp Val Gly Trp Trp Ser Ala Arg Val Cys			
340	345	350	
Gly Tyr Ser Ile Ser Tyr Ser Thr Gly Asp Pro Met Leu Pro Leu Ile			
355	360	365	
Gly Asp Gly Met Asn Ala His Ser Ile His Leu Gly Trp Asp Trp Ser			
370	375	380	
Ile Ala Asn Thr Gly Ile Val Asn Tyr Pro Val Gly Thr Val Gly Arg			
385	390	395	400
Lys Glu Asp Leu Arg Val Gly Ala Ile Trp Cys Ala Thr Ala Phe Ser			
405	410	415	
Gly Ala Pro Phe Tyr Thr Gly Gln Tyr Gly His Thr Gly Ile Ile Glu			
420	425	430	
Ser Trp Ser Asp Thr Thr Val Thr Val Leu Glu Gln Asn Ile Leu Gly			
435	440	445	
Ser Pro Val Ile Arg Ser Thr Tyr Asp Leu Asn Thr Phe Leu Ser Thr			
450	455	460	
Leu Thr Gly Leu Ile Thr Phe Lys			
465	470		

<210> 12

<211> 574

<212> PRT

<213> Bacteriophage C1 polypeptide

<400> 12

Met Thr Leu Ser Lys Ile Lys Leu Phe Tyr Asn Thr Pro Phe Asn Asn
 1 5 10 15
 Met Gln Asn Thr Leu His Phe Asn Ser Asn Glu Glu Arg Asp Ala Tyr
 20 25 30
 Phe Asn Ser Lys Phe Asp Val His Glu Phe Thr Ser Thr Phe Asn Tyr
 35 40 45
 Arg Asn Met Lys Gly Val Leu Arg Val Thr Ile Asp Leu Val Ser Asp
 50 55 60
 Arg Ser Cys Phe Glu Gln Leu Met Gly Val Asn Tyr Cys Gln Val Gln
 65 70 75 80
 Tyr Ile Gln Ser Asn Arg Val Glu Tyr Leu Phe Val Thr Asp Ile Gln
 85 90 95
 Gln Leu Asn Asp Lys Val Cys Glu Leu Ser Leu Val Pro Asp Val Val
 100 105 110
 Met Thr Tyr Thr Gln Gly Asn Val Leu Asn Thr Leu Asn Asn Val Asn
 115 120 125
 Val Ile Arg Gln His Tyr Thr Gln Thr Glu Tyr Glu Gln Asn Leu Glu
 130 135 140
 Gln Ile Arg Ser Asn Asn Asp Val Leu Ala Thr Ser Thr Met Arg Val
 145 150 155 160
 His Ala Ile Lys Ser Glu Leu Phe Thr Gln Leu Glu Tyr Ile Leu Thr
 165 170 175
 Ile Gly Ala Asn Leu Arg Lys Ser Phe Gly Thr Ala Glu Lys Pro Lys
 180 185 190
 Phe Pro Ser Ser Ser Gly Ser Thr His Asp Gly Ile Tyr Asn Pro Tyr
 195 200 205
 Asp Met Tyr Trp Phe Asn Asp Tyr Glu Ser Leu Lys Glu Val Met Asp
 210 215 220
 Tyr Leu Thr Gly Tyr Pro Trp Ile Gln Gln Ser Ile Lys Asn Val Thr
 225 230 235 240
 Ile Ile Pro Ser Gly Phe Ile Lys Gln Glu Ser Leu Asn Asp His Glu
 245 250 255
 Pro Val Asn Gly Gly Asp Leu Ser Val Arg Lys Leu Gly Lys Gln Gly
 260 265 270
 Val Ser Asn Gln Lys Asp Phe Asn Ala Ile Ser Leu Asp Tyr Gln Ser
 275 280 285
 Leu Met Phe Thr Leu Gly Leu Asn Pro Ile Asn Asp Lys His Leu Leu
 290 295 300
 Arg Pro Asn Ile Val Thr Ala Glu Leu Thr Asp Tyr Ala Gly Asn Arg
 305 310 315 320
 Leu Pro Ile Asp Leu Ser Leu Ile Glu Thr Asn Leu Glu Phe Asp Ser
 325 330 335
 Phe Val Thr Met Gly Ala Lys Asn Glu Ile Lys Val Tyr Val Lys Asn
 340 345 350
 Tyr Asn Ala Arg Gly Asn Asn Val Gly Gln Tyr Ile Asp Asn Ala Leu
 355 360 365
 Thr Ile Asn Asn Phe Asp Thr Ile Gly Phe Ser Val Asp Ser Gly Glu
 370 375 380
 Leu Gly Lys Ala Asn Ser Ala Tyr Ser Arg Glu Leu Ser Asn Ser Arg
 385 390 395 400
 Gln Met Ser Ser Arg Ile Asn Thr Val Leu Asp Asn Asp Ala Ser Val
 405 410 415
 Lys Asp Arg Leu Phe Asn Ala Ile Ser Leu Ser Gly Gly Leu Ser Ile
 420 425 430
 Lys Ser Ala Leu Ser Gly Phe Asn Asn Glu Tyr Glu His Tyr Arg Asp

435	440	445
Gln Lys Ala Gln Phe Lys Gln Met Asp Ala Leu Pro Asn Ala Ile Thr		
450	455	460
Glu Gly His Val Gly Tyr Ala Pro Leu Phe Lys Gln Asp Lys Phe Gly		
465	470	475
Val His Leu Arg Leu Gly Arg Ile Ser Gln Asp Glu Leu Asn Asn Val		
485	490	495
Lys Lys Tyr Tyr Asn Met Phe Gly Tyr Glu Cys Asn Asp Tyr Ser Thr		
500	505	510
Lys Leu Ser Asp Ile Thr Ser Met Ser Ile Cys Asn Trp Val Gln Phe		
515	520	525
Lys Gly Ile Trp Thr Leu Pro Asn Val Asp Thr Gly His Met Asn Met		
530	535	540
Leu Arg Ala Leu Phe Glu Ala Gly Val Arg Leu Trp His Lys Glu Ser		
545	550	555
Asp Met Ile Asn Asn Thr Val Val Asn Asn Val Ile Ile Lys		
565	570	

<210> 13
 <211> 430
 <212> PRT
 <213> Bacteriophage C1 polypeptide

<400> 13		
Met Arg Gly Thr Asn Tyr Met Lys Phe Tyr Ile Asn Pro Phe Asp Gln		
1	5	10
His His Asp His Met Ser His His Asp His Glu His Trp Lys Glu Leu		
20	25	30
Gln Phe Ser Lys Ala Val Ala Asp Ala Ile Asn Ala Asn Ser Glu Lys		
35	40	45
Asn Ile Glu Gln Asp Gly Arg Leu Asp Gly His Asp Lys Asp Val Gln		
50	55	60
Asp Leu Lys Asn Ala Asp Leu Glu Ile Ile Gln Gln Ile Asp Glu Val		
65	70	75
Ala Ala Gln Ala Ala Glu Asn Lys Asn Leu Leu Gly Asn Leu Lys Gly		
85	90	95
Ala Glu Thr Ser Thr Ala Lys Ser Asn Ile Tyr Asn Gly Ile Gln Val		
100	105	110
Asp Val Lys Val Ala Pro Gln Ser Asp Asn Gly Leu Lys Ile Thr Thr		
115	120	125
Asp Gly Leu His Val Val Asp Tyr Thr Ser Lys Ile Ala Glu Ile Glu		
130	135	140
Gln Leu Ile Asp Glu Ile Leu Thr Pro Glu Gly Ser Asp Val Thr Met		
145	150	155
Glu Gln Ile Arg Ala Met Ile Glu Asn Leu Ser Gln Glu Phe Gly Glu		
165	170	175
Ala Asp Ala Gly Leu Lys Leu Gln Ile Asp Asn Met Glu Lys Arg Leu		
180	185	190
Ile Ala Leu Asp Ile Pro Asp Ile Asp Pro Leu Thr Gln Lys Ile Glu		
195	200	205
Leu Leu Asp Ala Asp Ile Leu Gly Val Lys Gln Ile Ser Thr Tyr Thr		
210	215	220
Glu Met Met Asn Ser Leu Ala Thr Phe Gly Ser Arg Glu Gly Ser Lys		
225	230	235
Ala Ile Arg Phe Asn Pro Val Gly Asn Ala Ser Thr Gly Thr Gln Ile		
245	250	255

Asp	Pro	Asn	Gly	Gly	Met	Asn	Leu	Leu	Tyr	Gln	Ser	His	Thr	Phe	Gln
260					265									270	
Val	Arg	Gly	Val	Thr	Lys	Arg	Phe	Glu	Phe	Leu	Leu	Leu	Asp	Ile	Trp
275					280									285	
His	Met	Thr	Phe	Arg	Gly	Thr	Gly	Trp	Pro	Glu	Gln	Val	Ala	Asp	Met
290					295									300	
Tyr	Tyr	Phe	Met	Leu	Asp	Ile	Tyr	Ala	Glu	Gly	Val	Thr	Asp	Arg	Leu
305					310									320	
Lys	His	Val	Leu	Ser	Asn	Asn	Ala	Ile	Thr	Met	Asn	Asp	Phe	His	Gln
					325									335	
Phe	Asp	Asn	Asn	Ala	Gln	Val	Lys	Lys	Trp	Tyr	Pro	Val	Val	Phe	Thr
					340									350	
Leu	Tyr	Gly	Asn	Asp	Asp	Lys	Glu	Glu	Met	Tyr	Leu	Val	Ala	Gln	Gly
					355									365	
Leu	Gly	Thr	Ser	Gly	Leu	Asp	Thr	Glu	Ser	Leu	Asp	Asn	Phe	Arg	Ala
					370									380	
Pro	Ala	Thr	Gly	Thr	Pro	Tyr	Val	Ile	Glu	Thr	Trp	Leu	Asp	Pro	Val
385					390									400	
Thr	Gly	Thr	Glu	Tyr	Met	Pro	Ala	Tyr	Gln	Ala	Asp	Gly	Tyr	Lys	His
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Lys	Pro	Phe	Asn	Gln	Trp	Val	Thr	Val	Glu	Asp	Phe	Tyr	Ser		
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<210> 14
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 <212> PRT
 <213> Bacteriophage C1 polypeptide

<400> 14																
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								20						30		
Ala	Gln	Ile	Glu	Thr	Lys	Ile	Met	Met	Tyr	Asp	Glu	Asp	Val	Gln	Lys	
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Val	Val	Asn	Glu	Leu	Ile	Phe	Thr	Gly	Ser	Lys	Val	Asn	Glu	Asp	Phe	
								50						60		
Arg	Glu	Glu	Phe	Val	Asn	Tyr	Phe	Phe	Asn	Arg	Glu	Pro	His	Trp	Asp	
								65						80		
Ser	Leu	Tyr	Ile	Phe	Arg	Ala	Lys	Leu	Lys	Gly	Ile	Leu	Lys	Thr	Lys	
								85						95		
Glu	Ala	Val	Leu	Asn	Met	Leu	Tyr	Leu	Lys	Ser	Thr	Glu	Leu	Leu		
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Gly	Glu	Ser	Met	Ser	Lys	Ser	Glu	Gly	His	Ser	Ser	Asn	Glu	Asn	Arg	
								115						125		
Ser	Arg	Asp	Asn	Ser	Thr	Asn	Glu	Ser	Asn	Gly	Glu	Asn	Arg	Gly	Ala	
								130						140		
Asn	Ala	His	Ser	Thr	Asn	Pro	Asp	Asp	Val	Thr	Asp	Thr	Asp	Leu	Glu	
								145						160		
Thr	Ala	Asn	Leu	Ser	Tyr	Ala	Asp	Asn	Leu	Asp	Lys	Ser	Tyr	Asn	Glu	
								165						175		
Ser	Val	Asn	Val	Ser	His	Ser	Lys	Gly	Ile	Ser	Ser	Ser	Gln	Gly	Ser	
								180						190		
Ser	Asn	Asn	Asn	Ser	Asn	Ser	Thr	Asn	Thr	Gln	Phe	Asn	Thr	Lys	Ala	
								195						205		
Leu	Glu	Glu	Tyr	Glu	Ala	Phe	Lys	Gln	Lys	Ile	Phe	Asp	Glu	Leu	Asp	

210	215	220
Ile Lys Leu Phe Ser Gln	Leu Phe Tyr Glu Gly	Tyr
225	230	235

<210> 15
 <211> 317
 <212> PRT
 <213> Bacteriophage C1 polypeptide

<400> 15

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Asn Tyr Phe Asn Ile Ile Tyr Ser Arg Tyr Val Glu Phe Leu Pro Leu			
35	40	45	
Leu Ile Ser Tyr Glu Asn Tyr Asp Leu Asp Ser Leu Leu Ile Glu Ser			
50	55	60	
Tyr Leu Arg Ala Gly Tyr Gly Val Ala Ile Gly Glu Thr Lys Thr Gly			
65	70	75	80
Lys Ile Asp Val Leu Gly Tyr Cys Ser Val Asn Thr Asn Tyr Leu Gln			
85	90	95	
Pro Ile Lys Glu Pro Leu Gln Gly Lys Asp Ile Thr Phe Ile His Asn			
100	105	110	
Asn Ile Leu Pro Lys Gly Lys Tyr Lys Glu Leu Thr Arg Tyr Ser Asp			
115	120	125	
Gly Asn Phe Val Val Leu Arg Asn Lys Arg Ala Ser Phe Leu Cys Asp			
130	135	140	
Tyr Asn Ile Ile Thr His Tyr Val Met Glu Met Ser Glu Ile Ala Asn			
145	150	155	160
Ser Arg Tyr Ser Ile Ser Ile Gln Ala Lys Val Asn Thr Phe Ile Arg			
165	170	175	
Asn Glu Gly Gly Ser Lys Asp Gly Gln Val Met Ala Asn Asn Leu Phe			
180	185	190	
Asn Gly Val Pro Tyr Thr Ala Thr Pro Lys Phe Asp Pro Glu Glu			
195	200	205	
His Ile Leu Thr Phe Asn Asn Ala Ser Ala Val Ser Phe Leu Pro Glu			
210	215	220	
Leu Lys Arg Glu Gln Gln Asn Lys Ile Ser Glu Leu Asn Ala Met Leu			
225	230	235	240
Gly Leu Asn Thr Leu Gly Val Asp Lys Glu Ser Gly Val Ser Glu Ile			
245	250	255	
Glu Ala Gln Ser Asn Thr Ala Phe Lys Lys Ala Asn Glu Asn Ile Tyr			
260	265	270	
Leu Gly Ile Arg Asn Glu Ala Leu Asn Leu Ile Asn Asn Lys Tyr Gly			
275	280	285	
Leu Asn Ile His Ala Glu Tyr Arg Asp Asn Met Val Ala Glu Leu Ser			
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Ser Ile Glu Lys Leu Gln Ile Val Ser Glu Val Ala Gln			
305	310	315	

<210> 16
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 <212> PRT
 <213> Bacteriophage C1 polypeptide

<400> 16

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 Phe Pro Lys Leu Asn Glu Thr Leu Ile Val Glu Thr Ala Ala Gly Asn
 50 55 60
 Arg Leu Asp Trp Leu Ala Lys Glu Ile Asp Phe Ile Gly Gln Tyr Ser
 65 70 75 80
 Glu Glu Tyr Val Ile Leu Asp Thr Val Pro Val Glu Leu Asp Leu Ser
 85 90 95
 Lys Ser Ala Gln Leu Met Leu Glu Arg Asn Tyr Pro Lys Ile Ala Ser
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 Lys Leu Tyr Gly Ala Gly Ile Leu Lys Lys Leu Lys Phe Thr Leu Asn
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 130 135 140
 Phe Ala Val Gln Val Tyr Lys Lys Ile Ala Asp Ile Asn Ile Ser
 145 150 155 160
 Glu Glu Gln Glu Leu Lys Ala Ile Ile Met Asp Tyr Thr Ser His Ile
 165 170 175
 Ala Asp Val Arg Glu Val Glu Ser Gly Ala Thr Met Gln Gln Phe Ile
 180 185 190
 Asn Lys Val Tyr Thr Ala Ile Leu Asn Leu Gln Asn Asn Ser Ala Lys
 195 200 205
 His Asn Glu Ala Ala Gln Ala Ser Gly Gly Ala Val Gly Arg Phe Thr
 210 215 220
 Thr Asn Thr Lys Leu Lys Asp Met Leu Ile Val Thr Thr Asp Glu Met
 225 230 235 240
 Lys Val Glu Ile Leu Asn Ser Phe Leu Ala Asn Thr Phe His Ala Glu
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 Gly Leu Asp Ile Thr Ser Gln Ile Ile Ser Phe Glu Asp Leu Gly Gly
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 Val Tyr Lys Ala Ala Glu Asp Ile Thr Val Asp Ala Thr Ile Gln Gly
 275 280 285
 Val Met Ala Ala Met Gly Asp Tyr Gln Val Lys Ala Gly Asp Val Ile
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 Pro Ala Gly Thr Val Phe Thr Tyr Glu Ile Pro Ala Glu Ala Leu Gly
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 325 330 335
 Val Ala Ile Phe Asp Val Arg Ser Ile Arg Tyr Lys Arg Tyr Thr Arg
 340 345 350
 Asn Met Leu Lys Ala Pro Phe Tyr Asn Gly Glu Phe Asp Glu Val Thr
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 370 375 380
 Lys Val Val Ile Lys Arg Ala Asn
 385 390

<210> 17

<211> 51

<212> PRT

<213> Bacteriophage C1 polypeptide

<400> 17

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Asp	Phe	Gly	Ile	Ser	Lys	Leu	Asp	Lys	Ser	Asn	Glu	Leu	Asn	Glu	Thr
								20					25		30
Met	Thr	Ile	Gly	Gln	Gly	Lys	Ser	Gln	Asp	Glu	Val	Thr	Thr	Ala	Leu
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Phe	Asn	Leu													
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<210> 18

<211> 56

<212> PRT

<213> Bacteriophage C1 polypeptide

<400> 18

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								20				25		30	
Pro	Lys	Gln	Gln	Glu	Glu	Gln	Glu	Pro	Glu	Val	Thr	Pro	Ile	Asp	Glu
								35				40		45	
Ile	Glu	Glu	Trp	Leu	Lys	Glu	Asp								
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<210> 19

<211> 64

<212> PRT

<213> Bacteriophage C1 polypeptide

<400> 19

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								20			25		30		
Thr	Arg	Asp	Val	Glu	Asp	Arg	Asp	Lys	Val	Met	Leu	Thr	Leu	Lys	Asn
								35			40		45		
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<210> 20

<211> 55

<212> PRT

<213> Bacteriophage C1 polypeptide

<400> 20

Met	Asn	His	Thr	Arg	Thr	Thr	His	Ile	Ser	Val	Thr	Glu	Thr	Ser	Ile
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Asp	Thr	Leu	Arg	Asp	Ile	Tyr	Ala	His	Glu	Val	Ala	Thr	Tyr	Gly	Met
								20			25		30		
Glu	Asn	Val	Lys	Val	Val	Ser	Phe	Thr	Met	Asn	Asn	Glu	Gly	Val	Thr
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Met Val Tyr Asp Ile Ile Lys
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<210> 21
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<212> DNA
<213> Bacteriophage C1 entire genomic sequence

<400> 21

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(formerly known as gene for alpha subunit)

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